Conclusion: Common Themes Across Disciplines

Several themes emerged from this selected review of literature: the importance of motivational knowledge, the value of time to consumers, the changing effects of economic variables on food choices over time, and the high value of enhanced health and life expectancy.

Motivation

"Stages" theories—stages of change and stages of information processing—provide important insights into how public information and regulation could affect food choice. The stages of change theory hypothesizes that consumers move through the stages of precontemplation, contemplation of change, decision to change, overt behavioral change, and maintenance of change. Information processing theory suggests that consumers may be exposed to a message, may receive the information, may be persuaded by the information, may retain the message, and may alter their behavior if they respond to the advertisement. In both theories, behavioral change follows the other stages, thus stressing the need to motivate consumers to adopt healthy lifestyles. Commercial, public, and educational sources of information may reinforce each other in guiding consumers through stages. Different sources could provide consumers with the motivation, reinforcement and how-to information they need to modify behavior.

Research findings are consistent with these theories. Contento et al. found that providing specific knowledge without motivational knowledge was not successful. Both motivation and how-to information must be provided, and should be targeted to an audience's needs. Variyam et al. (1997) found that a general attitude that healthful eating was important was not closely correlated with diet-disease and nutrient-content knowledge, which were themselves closely correlated. Furthermore, diet-disease and nutrient-content knowledge had a larger effect in diets.

From the perspective of these theories, consumers who think it is important to have a healthful diet, but who lack the specific knowledge to do so, are probably in an earlier stage of the information process—they are aware, but not sufficiently motivated to invest in specific information. Providing consumers diet-disease information—how to reduce the risk of cancer and heart disease—is likely to be more motivating than offering

general information about healthful eating without identifying the benefits.

The Value of Time

Both economic theory and observations of consumers' shopping behavior indicate that saving time becomes more important to consumers as incomes rise.

Convenience minimizes the time costs (forgone wages or alternative consumption) of buying, preparing, and consuming food. Marketing studies of grocery-shopping patterns reveal that consumers do not spend the time required to know the prices of the items in their grocery cart (Avery). Moorman reported from observations of shoppers that nearly half of consumers' choices were made in 1 second.

Flexible Economic Effects on Food Choices

Consumers' responses to food choice when prices and/or incomes change summarize complex behavior in which consumers balance the perceived utility of one expenditure against the other possibilities. If consumer perceptions change as a result of information, it would be expected that consumers' responses to price and income variation would change as well. Brown and Schrader demonstrated that consumers' purchases of food respond differently to changes in prices and income at different times, and Blisard and Blaylock demonstrated the same thing for changes in income.

The flexibility of economic effects is encouraging because current responses to income and prices are leading to overconsumption. The AHA identified easily affordable food as one of the root causes of overconsumption, a practice that has caused obesity to become an important risk factor for heart disease (American Heart Association, 1998). Variyam et al. (1997) found that high incomes encourage consumption of fat and cholesterol and offset the effects of knowledge in determining the diet. Given the flexibility of economic responses, affordable food will not inevitably defeat nutrition information in forming the diet. Economic responses can change over time if consumers reevaluate foods' characteristics.

High Value of Enhanced Health and Life Expectancy

The goal of providing and regulating nutrition information is to enhance health and increase life expectancy through improved food choices and nutrition. Because people place high value on health and life, as asserted by Cutler and Richardson, effective programs will very likely produce benefits in excess of costs. However, interacting forces that produce health and interacting information programs make tracing the effects of programs challenging.

Integrating the Themes With Policy

Mandatory nutrition labeling has created an environment rich in instructional information, at least for packaged foods. Motivated consumers can access information much more easily than they could before mandatory labeling. These circumstances suggest that moving more nutrition information efforts into motivational messages around the existing how-to of labels could be an efficient use of educational resources. Potential messages might combine motivation and instruction, for example, "Excess calories can be dangerous—read the label."

Even the motivated consumer will still value time. Regulators and educators could incorporate the value of time into their programs. One way would be to use symbols that summarize other information, such as a symbol for combined lows — fat, sodium, cholesterol, and calories. Other symbols could communicate high fiber, calcium, and/or protein. Consumers could use symbols that summarize information to simplify nutrition information processing when they are making their choices in very few seconds. Otherwise they may not process nutrition information.

The value consumers give to food characteristics can be changed by information, education, and advertising. One sandwich chain compared the fat content of its beef sandwich with the higher fat content of a competing hamburger using the slogan "Fat is cheap!" Regardless of the outcome of that campaign, evidence reveals that information can lead consumers to change their economic responses to foods' characteristics. Public programs could address similar image issues, such as "A real taste" for unsweetened, low-sodium foods.

Research from many social science disciplines offers insights for public dissemination and regulation of nutrition information. Given the value of improved health and life that could result from effective programs, it is worthwhile to weigh these results during program and policy development.